Remarks/Arguments:

Claims 1-3 and 5, 6, 8, 11, 12, 15, and 17 are presently pending. Claims 7, 9, 10, 13, 14, 16, and 18 have been cancelled. Claims 1, 6, and 8 have been amended. Reconsideration is respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 7, 8, 11, 12, 16, and 18 stand rejected under 35 U.S.C. § 102(b) as anticipated by Fumitoshi (JP 2001-073948). It is respectfully submitted, however, that the claims are patentable over this reference for the reasons set forth below.

Claims 7, 16, and 18 have been cancelled, thus obviating the rejection of these claims.

Applicants' invention, as recited by claim 1, includes a feature which is not disclosed, taught, or suggested by the cited art, namely:

> ...the rotor core defines a hollow bore and a through hole, the hollow bore extending from a first axial end of the rotor core...the through hole extending from the first axial end of the rotor core to a second axial end of the rotor core, the hollow bore having a diameter larger than a diameter of the through hole...
>
> ...the rotor core includes a built-in permanent magnet, an axial length of the permanent magnet being less than an axial length of the rotor core, the permanent magnet being positioned in the rotor core so that it extends from the second axial end of the rotor core opposite the hollow bore...
>
> ...the main bearing extends substantially to a bottom of the bore...and...
>
> ...a clearance between an inner surface of the bore and an outer peripheral surface of the main bearing is 0.5 to 3 mm.

This means that the rotor core defines a hollow bore and a through hole. The permanent magnet extends from an end of the rotor core opposite the hollow bore. The permanent magnet is axially shorter than the rotor core. This feature is found in the original application, for example, at page 9, lines 16-21, and page 13, lines 4-17, and FIG. 4. No new matter is added.

This also means that the main bearing extends substantially to a bottom of the hollow bore. A clearance between an inner surface of the bore and an outer peripheral surface of the main bearing is 0.5 to 3 mm. This feature is found in the original application at page 7, lines 6-27, and FIG. 4. No new matter is added.

Applicants respectfully submit that Fumitoshi fails to disclose, teach, or suggest at least the above features of claim 1.

Fumitoshi is directed to a compressor. As illustrated in FIG. 8, Fumitoshi discloses a rotor 17 having a rotor core 18. Rotor core 18 defines a boss 19 and a bore 20. Fumitoshi discloses permanent magnets 21 embedded in rotor core 18. See Fumitoshi at FIG. 8.

The Office Action (on page 9) indicates that boss 19 corresponds to the hollow bore of claim 1. Applicants respectfully disagree. Applicants respectfully submit that boss 19 corresponds to the through hole of claim 1, and bore 20 corresponds to the hollow bore of claim 1. Fumitoshi fails to disclose, teach, or suggest that permanent magnets 21 extend from an axial end of rotor iron core 18 that is opposite from the bore part 20. To the contrary, Fumitoshi depicts permanent magnets 21 extending from the axial end of rotor iron core 18 that includes the bore part 20. This is different from the claimed invention, which requires that the permanent magnet be positioned in the rotor core so that it extends from an end of the rotor core opposite the hollow bore.

Additionally, Fumitoshi fails to disclose, teach, or suggest the length of the clearance between the inner surface of bore 20 and the outer peripheral part of bearing part 6 (shown in FIG. 7 of Fumitoshi). To the contrary, Fumitoshi is silent on this clearance. This is different from the claimed invention, which requires a clearance between an inner surface of the bore and an outer peripheral surface of the main bearing to be 0.5 to 3 mm.

Accordingly, Applicants respectfully submit that Fumitoshi fails to disclose, teach, or suggest "the rotor core defines a hollow bore and a through hole, the hollow bore extending from a first axial end of the rotor core...the through hole extending from the first axial end of the rotor core to a second axial end of the rotor core, the hollow bore having a diameter larger than a diameter of the through hole...the rotor core includes a built-in permanent magnet, an axial length of the permanent magnet being less than an axial length of the rotor core, the permanent magnet being positioned in the rotor core so that it extends from the second axial end of the rotor core opposite the hollow bore...the main bearing extends substantially to a

bottom of the bore...and a clearance between an inner surface of the bore and an outer peripheral surface of the main bearing is 0.5 to 3 mm," as recited in claim 1.

It is because Applicants include the above features that the following advantages are achieved. "In this configuration, the magnetic flux by permanent magnet 205 occurs in the large part having no bore 212 in rotor core 203, so that a magnetic path wider than the size of permanent magnet 205 can be formed, the material cost of permanent magnet 205 can be reduced without largely reducing the effective magnetic flux amount of permanent magnet 205. Therefore, the efficiency is increased and simultaneously the cost is reduced." See Applicants' specification at page 15, lines 7-12.

Therefore, for the reasons set forth above, claim 1 is patentable over the cited art.

Claims 8, 11, and 12 include all features of claim 1 from which they depend. Thus, claims 8, 11, and 12 are also patentable over the cited art for the reasons set forth above.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-3 and 5-18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kojima et al. (US Pub. 2004/0191094) in view of Sasaki et al. (US Pat. 6,727,627). It is respectfully submitted, however, that the claims are patentable over these references for the reasons set forth below.

Claims 7, 9, 10, 13, 14, 16, and 18 have been cancelled, thus obviating the rejection of these claims.

Applicants respectfully submit that Kojima in view of Sasaki fails to disclose, teach, or suggest at least the above-described features of claim 1.

Kojima is directed to an electric compressor which includes a motor. As illustrated in FIG. 3, for example, Kojima discloses a motor unit 303 including a rotor 314. Rotor 314 includes a rotor core 315. A hollow bore 306 extends from the top axial end of rotor core 315. Rotor 314 further includes a permanent magnet 315a that is axially shorter than rotor core 315. Permanent magnet 315a is positioned so that it is axially centered in rotor core 315. See Kojima at paragraph [0052] and FIG. 3.

Sasaki is directed to a permanent magnet synchronous motor. As shown in FIGS. 17 and 18, for example, the motor includes a rotor 41 including a rotor core 42. Rotor core 42 defines a hole 51. A permanent magnet 45 is positioned in the rotor core 42. See Sasaki at column 19, lines 10-35, and FIG. 18.

The Office Action acknowledges that "Kojima fails to disclose permanent magnet 315a extending from an end of the rotor 314 opposite the hollow bore 306." Applicants agree, and respectfully submit that Sasaki fails to make up for the deficiencies of Kojima with respect to claim 1.

The Office Action (on page 10) indicates that hole 51 corresponds to the hollow bore of claim 1. Applicants respectfully disagree. Applicants respectfully submit that hole 51 corresponds to the through hole of claim 1. See FIG. 18 of Sasaki. Sasaki fails to disclose, teach, or suggest an element that corresponds to the hollow bore of claim 1. Even if Sasaki did disclose a hollow bore, Sasaki nonetheless fails to disclose, teach, or suggest that permanent magnet 45 extends from an axial end of rotor core 42 that is opposite from the hollow bore. This is different from the claimed invention, which requires that the permanent magnet be positioned in the rotor core so that it extends from an end of the rotor core opposite the hollow bore.

Additionally, the Office Action (on page 7) acknowledges that "Kojima et al in view of Sasaki disclose the claimed invention except mentioning that the clearance between the surface of the bore and the Outer diameter of the main bearing is 0.5 to 3 mm." Applicants agree. However, the Office Action goes on to assert "[i]t would have been obvious...to choose the proper clearance...since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art." Applicants respectfully disagree.

"A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." See M.P.E.P. § 2144.05(II)(B). Neither Kojima nor Sasaki discloses, teaches, or suggests that the clearance between the main bearing and the hollow bore is a "result effective variable." Thus, Applicants respectfully submit that the range of clearance disclosed in claim 1 cannot be the result of mere routine experimentation.

Accordingly, Applicants respectfully submit that Kojima in view of Sasaki fails to disclose, teach, or suggest "the rotor core defines a hollow bore and a through hole, the hollow bore extending from a first axial end of the rotor core...the through hole extending from the first axial end of the rotor core to a second axial end of the rotor core, the hollow bore having a diameter larger than a diameter of the through hole...the rotor core includes a built-in permanent magnet, an axial length of the permanent magnet being less than an axial length of the rotor core, the permanent magnet being positioned in the rotor core so that it extends from the second axial end of the rotor core opposite the hollow bore...the main bearing extends substantially to a bottom of the bore...and a clearance between an inner surface of the bore and an outer peripheral surface of the main bearing is 0.5 to 3 mm," as recited in claim 1.

As described above, it is <u>because</u> Applicants include the above features that the following advantages are achieved. "In this configuration, the magnetic flux by permanent magnet 205 occurs in the large part having no bore 212 in rotor core 203, so that a magnetic path wider than the size of permanent magnet 205 can be formed, the material cost of permanent magnet 205 can be reduced without largely reducing the effective magnetic flux amount of permanent magnet 205. Therefore, the efficiency is increased and simultaneously the cost is reduced." See Applicants' specification at page 15, lines 7-12.

Accordingly, for the reasons set forth above, claim 1 is patentable over the cited art.

Claims 2, 3, 5, 6, 8, 11, 12, 15, and 17 include all features of claim 1 from which they depend. Thus, claims 2, 3, 5, 6, 8, 11, 12, 15, and 17 are also patentable over the cited art for the reasons set forth above.

Applicants respectfully assert that the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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